

A106

2172

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 09/699,054

Filed: October 27, 2000

Inventor(s):

Charles P. Bobbitt

Steven G. Doughty

Examiner:

Unknown

Group/Art Unit:

2163

Atty. Dkt. No:

5053-30901



Title: CONFIGURING SYSTEMS
FOR GENERATING
BUSINESS TRANSACTION
REPORTS USING
PROCESSING
RELATIONSHIPS AMONG
ENTITIES OF AN
ORGANIZATION

RECEIVED
AUG 05 2002
Technology Center 2100

WHAT IS CLAIMED IS:

1. A method performed in a Financial Service Organization (FSO) computer system, the method comprising:

reading a processing relationship object from a database, wherein the processing relationship object describes a location of one or more processing parameter values in a first transaction-related data, wherein the one or more processing parameter values define an FSO entity in an FSO processing relationship tree structure stored in the database;

reading from the first transaction-related data the one or more processing parameter values described in the processing relationship object; and

transferring the one or more processing parameter values read from the first transaction-related data to a first memory.

2. The method of claim 1, wherein the processing relationship object and the FSO processing relationship tree structure are defined by a user of the FSO computer system during a configuration of the FSO computer system, and wherein the FSO computer system is configured to perform processing of transaction-related data.
3. The method of claim 1, wherein the first memory is a report record, and wherein the FSO computer system comprises a report record file comprising the report record.
4. The method of claim 3, wherein the database comprises a report record definition comprising the processing relationship object, and wherein the report record definition further comprises a report data definition describing a location of one or more data element values in the first transaction-related data.
5. The method of claim 3, wherein the FSO computer system further comprises a plurality of transaction-related data, wherein the processing relationship object

describes a location of one or more processing parameter values in each of the transaction-related data, wherein the first transaction-related data is one of the plurality of transaction-related data, and wherein the method further comprises:

- a) accessing a next transaction-related data from the plurality of transaction-related data;
- b) creating a next report record in the report record file;
- c) reading from the next transaction-related data the one or more processing parameter values described in the processing relationship object;
- d) transferring the one or more processing parameter values read from the next transaction-related data to the next report record, and;
- e) repeating a) through d) until each of the plurality of transaction-related data has been accessed;

wherein one report record is created in the report record file for each of the plurality of transaction-related data.

- 6. The method of claim 5, further comprising sorting the report records in the report record file on the one or more processing parameter values in the report records.
- 7. The method of claim 1, further comprising:
 - reading a report data definition from the database, wherein the report data definition describes a location of one or more data element values in the first transaction-related data;
 - reading from the first transaction-related data the one or more data element values described in the report data definition, and;
 - transferring the one or more data element values read from the first transaction-related data to the first memory.
- 8. The method of claim 6, wherein the first memory comprises a report record, wherein the FSO computer system comprises a report record file comprising the report record, wherein the FSO computer system further comprises a plurality of

transaction-related data, wherein the processing relationship object describes a location of one or more processing parameter values in each of the transaction-related data, wherein the first transaction-related data is one of the plurality of transaction-related data, and wherein the method further comprises:

- a) accessing a next transaction-related data from the plurality of transaction-related data;
- b) creating a next report record in the report record file;
- c) reading from the next transaction-related data the one or more processing parameter values described in the processing relationship object;
- d) transferring the one or more processing parameter values read from the next transaction-related data to the next report record;
- e) reading from the next transaction-related data the one or more data element values described in the report data definition;
- f) transferring the one or more data element values read from the next transaction-related data to the next report record; and
- g) repeating a) through f) until each of the plurality of transaction-related data has been accessed;

wherein one report record is created in the report record file for each of the plurality of transaction-related data.

- 9. The method of claim 8, further comprising:
 - reading a report record from the report record file; and
 - transferring one or more of the data element values from the report record to an FSO report.
- 10. The method of claim 8, wherein the FSO report is a current FSO entity report configured for reporting the report records of the FSO entity defined by the one or more processing parameter values of the report record, and wherein the method further comprises:

- h) reading a next report record from the report record file;
- i) comparing one or more processing parameter values from the next report record to the one or more processing parameter values that define the FSO entity of the current FSO entity report;
- j) creating a next FSO entity report in response to the one or more processing parameter values of the next report record not being equal to the one or more processing parameter values that define the FSO entity of the current FSO entity report, wherein the next FSO entity report is configured for reporting the report records of the FSO entity defined by the processing parameter values of the next report record.
- k) designating the next FSO entity report the current FSO entity report in response to creating the next FSO entity report;
- l) transferring one or more of the data element values from the next report record to the current FSO entity report, and;
- m) repeating h) through l) until all of the report records in the report record file have been read.

11. The method of claim 10, wherein the FSO processing relationship tree structure comprises one or more branches, wherein each of the one or more branches comprises one or more FSO entities defined by one or more processing parameter values, wherein one or more FSO entities on a branch of the tree structure report to a first FSO entity higher on the branch of the tree structure, the method further comprising:

sorting the report records in the report record file prior to reading the report record from the report record file, wherein sorting the report records comprises ordering the report records such that report records comprising processing parameter values for the one or more FSO entities below the first FSO entity on the branch of the tree structure appear before report records for the first FSO entity in the report record file;

wherein j) further comprises:

creating a summary report in response to the one or more processing parameter values of the next report record not being equal to the one or more processing parameter values that define the FSO entity of the current FSO entity report and being equal to the one or more processing parameter values of the first FSO entity; and

wherein the summary report comprises a summary of one or more of the data element values from the report records of the one or more FSO entities below the first FSO entity on the branch of the tree structure.

12. A system for processing FSO transactions, the system comprising:
 - a computer program;
 - a computer system;
 - wherein the computer program is executable on the computer system to execute:
 - reading a processing relationship object from a database, wherein the processing relationship object describes a location of one or more processing parameter values in a first transaction-related data, wherein the one or more processing parameter values define an FSO entity in an FSO processing relationship tree structure stored in the database;
 - reading from the first transaction-related data the one or more processing parameter values described in the processing relationship object; and
 - transferring the one or more processing parameter values read from the first transaction-related data to a first memory.
13. The system of claim 12, wherein the processing relationship object and the FSO processing relationship tree structure are defined by a user of the FSO computer system during a configuration of the FSO computer system, and wherein the FSO computer system is configured to perform processing of transaction-related data.
14. The system of claim 12, wherein the computer system comprises a display device coupled to the computer system to display data.

15. The system of claim 14, wherein the display device is a display screen.
16. The system of claim 12, wherein the computer system comprises a user input device coupled to the computer system to enter data.
17. The system of claim 16, wherein the user input device is a mouse or a keyboard.
18. The system of claim 12, wherein the computer system comprises an output device coupled to the computer system to output data.
19. The system of claim 18, wherein the output device is a printer or a disk.
20. The system of claim 12, wherein the first memory comprises a report record, and wherein the FSO computer system comprises a report record file comprising the report record.
21. The system of claim 20, wherein the database comprises a report record definition comprising the processing relationship object, and wherein the report record definition further comprises a report data definition describing a location of one or more data element values in the first transaction-related data.
22. The system of claim 20, wherein the FSO computer system further comprises a plurality of transaction-related data, wherein the processing relationship object describes a location of one or more processing parameter values in each of the transaction-related data, wherein the first transaction-related data is one of the plurality of transaction-related data, and wherein the computer program is further executable on the computer system to execute:
 - a) accessing a next transaction-related data from the plurality of transaction-related data;

- b) creating a next report record in the report record file;
- c) reading from the next transaction-related data the one or more processing parameter values described in the processing relationship object;
- d) transferring the one or more processing parameter values read from the next transaction-related data to the next report record, and;
- e) repeating a) through d) until each of the plurality of transaction-related data has been accessed;

wherein one report record is created in the report record file for each of the plurality of transaction-related data.

- 23. The system of claim 22, wherein the computer program is further executable on the computer system to execute: sorting the report records in the report record file on the one or more processing parameter values in the report records.
- 24. The system of claim 12, wherein the computer program is further executable on the computer system to execute:
 - reading a report data definition from the database, wherein the report data definition describes a location of one or more data element values in the first transaction-related data;
 - reading from the first transaction-related data the one or more data element values described in the report data definition; and
 - transferring the one or more data element values read from the first transaction-related data to the first memory.
- 25. The system of claim 24, wherein the first memory is a report record, wherein the FSO computer system comprises a report record file comprising the report record, wherein the FSO computer system further comprises a plurality of transaction-related data, wherein the processing relationship object describes a location of one or more processing parameter values in each of the transaction-related data,

wherein the first transaction-related data is one of the plurality of transaction-related data, and wherein the computer program is further executable on the computer system to execute:

- a) accessing a next transaction-related data from the plurality of transaction-related data;
- b) creating a next report record in the report record file;
- c) reading from the next transaction-related data the one or more processing parameter values described in the processing relationship object;
- d) transferring the one or more processing parameter values read from the next transaction-related data to the next report record;
- e) reading from the next transaction-related data the one or more data element values described in the report data definition;
- f) transferring the one or more data element values read from the next transaction-related data to the next report record, and;
- g) repeating a) through f) until each of the plurality of transaction-related data has been accessed;

wherein one report record is created in the report record file for each of the plurality of transaction-related data.

26. The system of claim 25, wherein the computer program is further executable on the computer system to execute:

reading a report record from the report record file; and

transferring one or more of the data element values from the report record to an FSO report.

27. The system of claim 26, wherein the FSO report comprises a current FSO entity report configured for reporting the report records of the FSO entity defined by the one or more processing parameter values of the report record, and wherein the computer program is further executable on the computer system to execute:

- h) reading a next report record from the report record file;
- i) comparing one or more processing parameter values from the next report record to the one or more processing parameter values that define the FSO entity of the current FSO entity report;
- j) creating a next FSO entity report in response to the one or more processing parameter values of the next report record not being equal to the one or more processing parameter values that define the FSO entity of the current FSO entity report, wherein the next FSO entity report is configured for reporting the report records of the FSO entity defined by the processing parameter values of the next report record.
- k) designating the next FSO entity report the current FSO entity report in response to creating the next FSO entity report;
- l) transferring one or more of the data element values from the next report record to the current FSO entity report; and
- m) repeating h) through l) until all of the report records in the report record file have been read.

28. The system of claim 27, wherein the FSO processing relationship tree structure comprises one or more branches, wherein each of the one or more branches comprises one or more FSO entities defined by one or more processing parameter values, wherein one or more FSO entities on a branch of the tree structure report to a first FSO entity higher on the branch of the tree structure, and wherein the computer program is further executable on the computer system to execute:

sorting the report records in the report record file prior to reading the report record from the report record file, wherein sorting the report records comprises ordering the report records such that report records comprising processing parameter values for the one or more FSO entities below the first FSO entity on the branch of the tree structure appear before report records for the first FSO entity in the report record file;

wherein j) further comprises:

creating a summary report in response to the one or more processing parameter values of the next report record not being equal to the one or more processing parameter values that define the FSO entity of the current FSO entity report and being equal to the one or more processing parameter values of the first FSO entity; and

wherein the summary report comprises a summary of one or more of the data element values from the report records of the one or more FSO entities below the first FSO entity on the branch of the tree structure.

29. A carrier medium comprising program instructions, wherein the program instructions are executable by a computer system to implement:

reading a processing relationship object from a database, wherein the processing relationship object describes a location of one or more processing parameter values in a first transaction-related data, wherein the one or more processing parameter values define an FSO entity in an FSO processing relationship tree structure stored in the database;

reading from the first transaction-related data the one or more processing parameter values described in the processing relationship object; and

transferring the one or more processing parameter values read from the first transaction-related data to a first memory.

30. The carrier medium of claim 29, wherein the processing relationship object and the FSO processing relationship tree structure are defined by a user of the FSO computer system during a configuration of the FSO computer system, and wherein the FSO computer system is configured to perform processing of transaction-related data.

31. The carrier medium of claim 29, wherein the first memory comprises a report record, and wherein the FSO computer system comprises a report record file comprising the report record.

32. The carrier medium of claim 31, wherein the database comprises a report record definition comprising the processing relationship object, and wherein the report record definition further comprises a report data definition describing a location of one or more data element values in the first transaction-related data.
33. The carrier medium of claim 31, wherein the FSO computer system further comprises a plurality of transaction-related data, wherein the processing relationship object describes a location of one or more processing parameter values in each of the transaction-related data, wherein the first transaction-related data is one of the plurality of transaction-related data, and wherein the program instructions are further executable by the computer system to implement:
- a) accessing a next transaction-related data from the plurality of transaction-related data;
 - b) creating a next report record in the report record file;
 - c) reading from the next transaction-related data the one or more processing parameter values described in the processing relationship object;
 - d) transferring the one or more processing parameter values read from the next transaction-related data to the next report record; and
 - e) repeating a) through d) until each of the plurality of transaction-related data has been accessed;
- wherein one report record is created in the report record file for each of the plurality of transaction-related data.
34. The carrier medium of claim 33, further comprising sorting the report records in the report record file on the one or more processing parameter values in the report records.
35. The carrier medium of claim 29, further comprising:

reading a report data definition from the database, wherein the report data definition describes a location of one or more data element values in the first transaction-related data;

reading from the first transaction-related data the one or more data element values described in the report data definition; and

transferring the one or more data element values read from the first transaction-related data to the first memory.

36. The carrier medium of claim 35, wherein the first memory is a report record, wherein the FSO computer system comprises a report record file comprising the report record, wherein the FSO computer system further comprises a plurality of transaction-related data, wherein the processing relationship object describes a location of one or more processing parameter values in each of the transaction-related data, wherein the first transaction-related data is one of the plurality of transaction-related data, and wherein the program instructions are further executable by the computer system to implement:
- a) accessing a next transaction-related data from the plurality of transaction-related data;
 - b) creating a next report record in the report record file;
 - c) reading from the next transaction-related data the one or more processing parameter values described in the processing relationship object;
 - d) transferring the one or more processing parameter values read from the next transaction-related data to the next report record;
 - e) reading from the next transaction-related data the one or more data element values described in the report data definition;
 - f) transferring the one or more data element values read from the next transaction-related data to the next report record; and
 - g) repeating a) through f) until each of the plurality of transaction-related data has been accessed;

wherein one report record is created in the report record file for each of the plurality of transaction-related data.

37. The carrier medium of claim 36, wherein the program instructions are further executable by the computer system to implement:
- reading a report record from the report record file; and
 - transferring one or more of the data element values from the report record to an FSO report.
38. The carrier medium of claim 37, wherein the FSO report is a current FSO entity report configured for reporting the report records of the FSO entity defined by the one or more processing parameter values of the report record, and wherein the program instructions are further executable by the computer system to implement:
- h) reading a next report record from the report record file;
 - i) comparing one or more processing parameter values from the next report record to the one or more processing parameter values that define the FSO entity of the current FSO entity report;
 - j) creating a next FSO entity report in response to the one or more processing parameter values of the next report record not being equal to the one or more processing parameter values that define the FSO entity of the current FSO entity report, wherein the next FSO entity report is configured for reporting the report records of the FSO entity defined by the processing parameter values of the next report record.
 - k) designating the next FSO entity report the current FSO entity report in response to creating the next FSO entity report;
 - l) transferring one or more of the data element values from the next report record to the current FSO entity report; and
 - m) repeating h) through l) until all of the report records in the report record file have been read.

39. The carrier medium of claim 38, wherein the FSO processing relationship tree structure comprises one or more branches, wherein each of the one or more branches comprises one or more FSO entities defined by one or more processing parameter values, wherein one or more FSO entities on a branch of the tree structure report to a first FSO entity higher on the branch of the tree structure, and wherein the program instructions are further executable by the computer system to implement:

 sorting the report records in the report record file prior to reading the report record from the report record file, wherein sorting the report records comprises ordering the report records such that report records comprising processing parameter values for the one or more FSO entities below the first FSO entity on the branch of the tree structure appear before report records for the first FSO entity in the report record file;

 wherein j) further comprises:

 creating a summary report in response to the one or more processing parameter values of the next report record not being equal to the one or more processing parameter values that define the FSO entity of the current FSO entity report and being equal to the one or more processing parameter values of the first FSO entity; and

 wherein the summary report comprises a summary of one or more of the data element values from the report records of the one or more FSO entities below the first FSO entity on the branch of the tree structure.

40. A method performed in a Financial Service Organization (FSO) computer system to generate an FSO report, the method comprising:

 configuring a break key definition, wherein the break key definition comprises a break key identifier and a corresponding break key value associated with the break key identifier, wherein the break key definition is used to specify a format for the FSO report;

receiving an FSO data associated with an FSO transaction using a report data gathering program, wherein the report data gathering program uses the break key definition to read the corresponding break key value associated with the break key identifier from the FSO data;
storing the FSO data in a database;
sorting the FSO data stored in the database by using the break key definition to generate sorted FSO data;
storing the sorted FSO data in the database;
collating the sorted FSO data by using a report formatting program and the break key definition;
generating the FSO report consistent with the break key definition.

73. A method performed in a Financial Service Organization (FSO) computer system, the method comprising:

configuring a report object, wherein the report object describes one or more methods and one or more properties associated with the report object, wherein the report object identifies a first report format and one or more data sources, wherein each of the one or more data sources is identified by a unique identifier;

collecting a first report data from each of the one or more data sources identified by the unique identifier;

storing the first report data in a database.

122. A method performed in a Financial Service Organization (FSO) computer system, the method comprising:

accessing a report object stored in a database, wherein the report object identifies a report format and describes a location of one or more report records corresponding to the report object, wherein each of the one or more report records is identified by a unique identifier;

preparing an FSO report by reading the one or more report records stored in the database, wherein a format of the FSO report is consistent with the report format identified by the report object;
transferring the FSO report to an output device.